

REMARKS

Claims 1-12 and 15-48 are pending in the application.

By the foregoing Amendment, claims 13 and 14 are cancelled without prejudice or disclaimer. New claims 16-48 are added. Claims 8 and 9 have been amended.

The claims have been amended for the following reasons:

<i>Claim number</i>	<i>Reason(s) for amendment</i>
8	<ul style="list-style-type: none">• Method limitation (“detecting”) changed to “article limitation (“means for detecting”) for consistency with preamble and remaining limitations;• “animation” changed to --animated sequence-- to provide consistency in the terminology
9	<ul style="list-style-type: none">• “lapsed” changed to --elapsed-- to correct typographical error• “animation” changed to --animated sequence-- to provide consistency in the terminology

These changes are believed not to introduce new matter, and entry of the Amendment is respectfully requested.

Based on the above Amendment and the following Remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections, and withdraw them.

Rejection under 35 U.S.C. § 101

In paragraph 1 of the Office Action, claims 13 and 14 were rejected under section 101 as being directed to non-statutory subject matter, specifically, a software program. This rejection is overcome by the cancellation of claims 13 and 14 without prejudice or disclaimer.

Canceled claims 13 and 14 are replaced by new claims 22 and 23, which are not directed to a computer program but to a computer readable medium encoded with a computer program

containing an electronic publication, which is believed to satisfy the standards set forth in MPEP Section IV.B.1(a) (“When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized.”). New claim 22 recites an electronic publication having the same features as recited in claim 1; while new claim 23 recites a user interface having the same features as recited in claim 8.

Rejections under 35 U.S.C. § 102

In paragraph 2 of the Office Action, claims 1-5 and 7-14 were rejected under section 102(e) as being anticipated by Henckel. The rejection with respect to claims 13 and 14 is overcome by the cancellation of claims 13 and 14 without prejudice or disclaimer, and with respect to claims 1-5 and 7-14 is respectfully traversed as being based upon a reference that neither teaches nor suggests the claimed invention.

Neither Henckel or any of the other cited prior art provides any particular insight or teachings towards the present invention. The present invention as reflected in claim 1 is generally directed to a multi-page electronic publication; and as reflected in claims 8-12 is more specifically directed to a multi-page electronic publication containing a page-turn. Although the prior art cited by the Examiner does mention some form of page-turn, none of the documents provide any insight into how the animation of the page-turn is controlled, conducted or completed to provide a realistic page-turn throughout the sequence of animations. Indeed, Henckel does little more than mention displaying

an animated sequence of images corresponding to turning of a page. It does nothing to explain how that may be conducted or any constraints upon how the animation may be calculated.

In order for the Examiner to better appreciate the various features of the invention as set forth in the pending claims, a CD is provided herewith, on which is an executable file with a brochure employing a page turn in accordance with the present invention. The brochure is for Dell computer products, and can be accessed by using the Windows® "Run" menu or by double-clicking on the file icon in the CD's directory. Once the file has been opened, the Examiner should proceed to the menu bar on the sample, and click on "Control" and "Page-Turn" and reset the speed of the page turn. If the Examiner selects a very long period for the page turn (such as 25 seconds), the Examiner will be able to see the amount of work that has gone into accurately mapping the text to the turning page.

Turning now specifically to claim 1, contrary to the assertions in the Office Action, nothing in Henckel nor any of the other prior art refers to the provision of such a publication in a "unitary file in assembly code to address a compatible hardware processor directly." The use of assembly code in the present invention provides considerable advantages over the prior art.

One of the difficulties with the prior art is not only calculating the position of the page through a proper sequence of animated frames but also in trying to map text to a convex moving page throughout that animation. The present invention seeks to do so to the point where the text remains relatively readable over that portion of the page still exposed to provide a sharp or more realistic animation.

The reason for using assembly code in the present invention relates to the fact that the present invention seeks to map text to a convex moving page throughout the animation by calculating

accurate mapping of the original page to the convex page to a sub-pixel level. In fact, often a plurality of pixels are mapped to a single pixel on the turning page or vice versa and anti-aliasing is provided to ensure sharp text is presented on the turning page. As this mapping is done on a pixel-by-pixel basis with compression across the page and stretched on the length of the page to map the corresponding positions on the turning page, a large number of calculations need to be performed. The provision of such a publication in a high level language such as visual basic, C++ or similar is unworkable on current hardware processors. It is for this reason that prior solutions, albeit they are not provided in the prior art cited in the Office Action, tend to use simplified techniques such as cutting the original page into a plurality of columns and manipulating each column rather than trying to shift the original text to the turning page on an accurate pixel-by-pixel basis. With such a large number of calculations being performed, the use of an assembly code avoids a number of requests across the memory bus and allows for some data to be held within the processor on registers. Less time critical data reads and writes or non-critical operations such as screen refresh commands can be addressed to sub-routines in the operation system or access other portions of the computer. If the present invention were implemented in other higher-level languages, the animation would be sufficiently slow so as to seriously detract from the presentation of the turning page.

Turning now to claim 8, again, it is respectfully submitted that the prior art has not been correctly assessed in its application against this claim.

The Examiner's attention is respectfully invited to the final subparagraph of claim 8, in which it is stated that the "animation reveals less of the subsequent page beneath the first page at the commencement of the animation with respect to time than when the first page approaches a position

representing the page orthogonal to the axis of rotation of the first page.” This limitation describes the timing of the animation in the present invention. Essentially, the present invention applies substantially constant rotation to the page about the central axis of the book. It will be appreciated that the rate at which the page underneath the turning page is revealed increases over time as the page approaches a position where it is essentially upright from the book should it be in three dimensions. Of course, the opposite holds true as the page continues to turn and lays down on an opposed page. In the second half of the rotation, the rate at which the other page is covered by the turning page decreases with respect to time.

It is this type of timing sequence that provides a relatively smooth appearance to the “lift off” and “landing” of the page.

As previously stated, it is respectfully submitted that upon examination, there is absolutely no description in any of the prior art, including Henckel, of such a timing sequence or indeed any detail on the animation whatsoever. Although the prior art may have various figures which show a page may turn, this does nothing to dictate how the page may be presented on the screen or control of the animation so as to give an accurate look and feel to the interface.

The Examiner’s attention is also respectfully invited to the additional feature in claim 9 wherein the position of the first or turning page in a frame of the animation is calculated with respect to “elapsed” (note that a typographical error has been corrected in this claim) time during the predetermined total time for completion of the page turn. At the commencement of preparing the frame of the animation, the position of the page is calculated by determining the elapsed time since commencement of the request for a page turn and providing the animation at that point. It should

be apparent that the present invention does this so as to ensure that substantially the same page turn is presented on different personal computers, regardless of the processing speed of the Windows cycle. The difference would be the number of animations produced in the sequence however each of the frames in the animation will be accurately presented according to the elapsed time to complete the page turn. Someone designing the publication can set the length of time to achieve the page turn (as recited in claim 10) and feel assured that the page turn will be the same regardless of the system components of an end user that may be viewing the publication. Other publications that may seek to provide an animation sequence can end up with an uneven animation sequence if the processor is slow, particularly if the processor is being requested to make other tasks due to other applications running simultaneously and the speed of the Windows operating cycle varies throughout the animation sequence. The present invention seeks to make the animation independent of processor speed.

As stated previously, the prior art, including Henckel, is again entirely silent on such matters. Although the Office Action refers to column 3, lines 13-26 and lines 29-36 of Henckel, this hardly describes the same feature. The first passage (column 3, lines 13-26) merely refers to a continued animation to complete the page turn and the second passage (column 3, lines 29-36) merely refers to a possibility of the capability to calculate the appearance of the partially turned page in real time. It does not describe how such a calculation is performed or indeed that it is done by elapsed time. It merely speculates that the turning page could be calculated as a function of time. It should be apparent that a choice is made between determining the position of the page with respect to elapsed time such as in the present invention (as recited in claim 9) or, for example, displaying a series of

20 animations, each at equal degrees of rotation of the page from each other. Whereas the present invention calculates according to elapsed time, the second possibility would cause an uneven page turn should the processor be delayed in the calculation of some of the animated frames through the process of performing other functions. Henckel has not even considered this particular problem, let alone suggested a solution.

The Examiner's attention is further invited to claim 11, which recites that "an edge of said turning page distal from said centre of rotation increasingly stretches along an axis parallel to said axis of rotation as said edge approaches the axis of rotation." It is respectfully submitted that Henckel does nothing to teach this limitation, and indeed Henckel's Fig. 2, which was referenced in the Office Action, illustrates quite the opposite action to that recited in claim 11. The present invention brings the page towards the viewer in a three-dimensional manner. The outer edge of the turning page approaches the viewer during the page turn and is showing increasingly larger as a result.

The Examiner's attention also is directed to new claim 16, which recites that "said edge of said turning page distal from said centre of rotation stretches along an axis parallel to said axis of rotation such that the upper and lower corners of the page transcribe an elliptical path outside the area of a non-turning page," and to Fig. 6 of the present application (which illustrates the limitation recited in claim 16), which illustrates the manner in which the outer edge of the turning page has expanded both above and below the original unturned page. In contrast, the document illustrated in Fig. 2 of the Henckel patent shows that the page is shifted vertically. This is the equivalent of the difference between an isometric 3-dimensional representation of an object as opposed to a

perspective representation of the object. It is respectfully submitted that the present invention as recited in claims 11 and 16 provides a much more realistic animation than that shown in Fig. 2 of Henckel.

In view of the foregoing, it is respectfully submitted that the invention as recited in independent claims 1 and 8, and claims 2-5, 7-12, 15, and 16 depending therefrom is not anticipated or suggested by Henckel, and that the rejection should be withdrawn.

Rejections under 35 U.S.C. § 103

In paragraph 5 of the Office Action, claim 6 was rejected under section 103(a) as being unpatentable over Henckel in view of Ho. This rejection is respectfully traversed as being based upon a combination of references that does not teach or suggest the invention.

In the Office Action, it was recognized that Henckel does not teach an operating system comprising a Microsoft Windows operating system. Ho was cited as teaching "an electronic publication having a Microsoft Windows operating system." However, as discussed above in connection with the rejection of claim 1, from which claim 6 depends, none of the prior art cited by the Examiner (which includes Ho), teaches or suggests the invention as recited in claim 1. Thus, even assuming that Ho teaches "an electronic publication having a Microsoft Windows operating system" as stated in the Office Action, Henckel and Ho in combination do not teach or suggest the limitations recited in claim 1, which are incorporated into claim 6 by virtue of its dependency from claim 1. Accordingly, it is respectfully submitted that the invention as recited in claim 6 is patentable over Henckel in combination with Ho, and that the rejection should be withdrawn.

New claims 17-21

With respect to new claim 17 and its dependent claims 18-21, much of the present invention relates to the accurate mapping of text or graphics to the turning page throughout the animation sequence and trying to provide a clear image. It will be appreciated that, with the page turning and also assuming a convex shape throughout the turn, text on a partially turned page should appear compressed in the horizontal direction as the width of the page reduces and simultaneously stretched due to the perspective view taken of the page as it approaches the outer edge of the page. This movement of the text or image on the page is exceedingly complex as the compression in the horizontal direction is not linear due to the convex nature of the page and the expansion due to the perspective view taken of the page as it approaches the user is proportional to the position of the text along the horizontal direction. For example, a piece of text very close to the centre line of the document does not expand significantly due to the perspective view taking of the turning page. An item of text towards the outer edge does expand significantly due to greater distance it has travelled towards the user.

Attempting to slice the page into columns, horizontal strips or any other such solutions so as to manipulate large portions of the text in one go simply does not work. It leads to discontinuities in the text when presented on the turning page. Instead, the present invention as recited in claim 17 considers the position of each item of text on the original page and endeavors to accurately map it to a corresponding position on the turning page. It does not slice the page into columns or rows but effectively moves each individual pixel from the original picture to a correct position on the turning page. Of course, it will be appreciated that, as recited in claim 18, the image or text on the turning

page compresses in a direction orthogonal to the axis of rotation (that is, the turning page is significantly smaller, at least in the horizontal direction, than the original page).

✓ As discussed in the present application at page 22, lines 9 *et seq.*, in compressing the page, it is often necessary to map multiple pixels from the source page to a single pixel in the turning page. This mapping does not always operate in whole numbers. For example, $2\frac{1}{4}$ pixels on an original page may need to be mapped to a single pixel on the turning page due to the compression in the horizontal direction. Simultaneously, those $2\frac{1}{2}$ pixels may need to be mapped to $1\frac{1}{2}$ pixels on the turning page in the vertical direction. There is no suggestion of the other documents in any of the prior art of record being able to achieve anything like this degree of realism.

To provide accuracy to the text which will often now come across pixel boundaries, claim 20 recites that the color of a pixel on a turning page is calculated by averaging the values of an uneven number of pixels from an original page or that a single pixel from an original page may be mapped and averaged to an uneven number of pixels on the turning page; and claim 21 recites the application of anti-aliasing to blend values across pixel boundaries. These are again features on which the prior art is wholly silent.

New claims 22-48

New claims 22-23 are directed to a computer readable medium encoded with a computer program for the inventions recited in independent claims 1, 8, and 17. New claims 25-48 recite features similar to those of new claims 17-24, but in means-plus-function and method formats. New

claims 22-48 are thus believed to be patentable over the prior art of record for the reasons discussed above with respect to claims 1, 8, and 17-24.

Conclusion

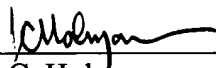
All rejections have been complied with, properly traversed, or rendered moot. Thus, it now appears that the application is in condition for allowance. *The Examiner is requested to telephone Applicant's undersigned representative after the Examiner has received and considered this paper, in order to discuss and resolve any issues that may remain pending*, so that this case may receive an early Notice of Allowance.

Favorable consideration and allowance are earnestly solicited.

Respectfully submitted,

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